

MONSANTO PRODUCT NAME

RODEO® Emerged Aquatic Weed and Brush Herbicide

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: RODEO® Emerged Aquatic Weed and Brush Herbicide

Synonyms: None

EPA Reg. No.: 524-343

Company ID: Monsanto Company
800 North Lindbergh
St. Louis, MO 63167, U.S.A.

Phone #s: Emergency Phone Number (call collect): 314-694-4000
Non-Emergency Information: 1-800-332-3111

Revisions: Sections containing a revision or new information are marked with a §

MSDS Number: S00010153

Date: January, 1998

Supersedes: November, 1994

2. COMPOSITION INFORMATION ON INGREDIENTS

Chemical Ingredients: <i>Active Ingredient:</i>	Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt	53.8 %
<i>Inert Ingredients:</i>	46.2 %
		100.0%
<u>Component</u>	<u>CAS Reg No</u>	<u>% by Wt</u>
Glyphosate, isopropylamine salt	38641-94-0	53.8%

* NO Hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR §1910.1200)

See Section 8 for exposure limits.

3. HAZARDS IDENTIFICATION §**Emergency Overview:**

Appearance & Odor: Colorless and odorless solution

Warning Statements: •Keep out of reach of children.

•CAUTION!

•HARMFUL IF INHALED

Avoid breathing spray mist.

Remove contaminated clothing and wash clothing before reuse.

Wash thoroughly with soap and water after handling.

Potential Adverse Health Effects:

Likely Routes of Exposure: Inhalation and skin contact

Eye Contact: No more than slightly irritating based on toxicity studies.

Skin Contact: No more than slightly toxic or irritating based on toxicity studies.

Ingestion: No more than slightly toxic based on toxicity studies. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed.

Inhalation: No more than slightly toxic if inhaled based on toxicity studies.

Refer to Section 11 for toxicological information.

4. FIRST AID MEASURES §

If Inhaled: Remove individual to fresh air. If not breathing give artificial respiration, preferably mouth to mouth. Get medical attention..

NOTE: For additional human emergency first aid or treatment guidance, call collect, anytime, day or night (314) 694-4000.

5. FIRE FIGHTING MEASURES

Flash Point: This material is not combustible as tested by the Tag Cup Test.

Auto Ignition Temperature: Not determined

Extinguishing Media: Use appropriate extinguishing media for exposure fire.

Special Fire Fighting Procedures: Firefighters and others that may be exposed to vapors, mists, dusts, or products of combustion should wear full protective clothing and self-contained breathing apparatus. Equipment should be thoroughly cleaned after use.

Unusual Fire or Explosion Hazards: None

6. ACCIDENTAL RELEASE MEASURES

Observe all protection and safety precautions when cleaning up spills - See Exposure Controls/Personal Protection, Section 8.

Small Spills: For a spill less than one gallon on floor or other impervious surface, soak up with towels or other absorbent material and discard in the trash. Clean the spill area with soap and water and rinse the area thoroughly.

Large Liquid Spills on the floor or other impervious surface should be contained or diked and then absorbed with attapulgite, bentonite or other absorbent clays. Collect the contaminated absorbent, place in a metal drum and dispose of in accordance with the instructions provided under Disposal, Section 13 of this MSDS. Thoroughly scrub floor or other impervious surface with a strong industrial detergent and rinse with water.

Large spills that soak into the ground should be dug up, placed in metal drums and disposed of in accordance with instructions provided under DISPOSAL, Section 13 of this MSDS. Contact appropriate state agency when considering a land spreading disposal option.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under DISPOSAL, Section 13 of this MSDS. Any recovered spilled liquid should be similarly collected and disposed of.

7. HANDLING AND STORAGE §

Handling:

- Avoid breathing vapors or spray mist
- Remove contaminated clothing and wash clothing before reuse.
- Wash thoroughly with soap and water after handling.
- Do not contaminate water when disposing of equipment wash waters.
- Treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss can cause fish suffocation.

Storage:

STORE ABOVE 10°F (-12°C) TO KEEP FROM CRYSTALLIZING.

Crystals will settle to the bottom. If allowed to crystallize, place in a warm room at 68°F (20°C) for several days to redissolve and mix well before using.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment:

Eye Protection: RODEO® Emerged Aquatic Weed and Brush herbicide does not present significant eye irritation or eye toxicity requiring special protection. Avoid eye contact as good industrial practice.

Skin Protection: RODEO® Emerged Aquatic Weed and Brush herbicide does not present significant skin concern requiring special protection.

Respiratory Protection: For Handling of the Undiluted Product: Undiluted RODEO® Emerged Aquatic Weed and Brush herbicide is not likely to represent an airborne exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which produces a heavy vapor or mist, workers should put on respiratory protection equipment. Consult respirator manufacturer to determine appropriate type of equipment. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 CFR §1910.134.

For Application of Product Diluted in accordance with label instructions: Respirators are not required for applications of use - dilutions of RODEO® Emerged Aquatic Weed and Brush herbicide.

Ventilation: No special precautions are recommended.

Exposure Guidelines:

Exposure Limits
RODEO®

OSHA PEL
None established

ACGIH TLV
None established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless solution

Odor: Essentially odorless

pH: 4.6 - 4.8

Specific Gravity: 1.22 - 1.25 (water = 1)

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable for at least 5 years under normal conditions of warehouse storage. Heated facilities are not required.

Conditions to Avoid: Store above 10°F (-12°C) to keep from crystallizing.

Incompatibility with Other Materials: Spray solutions of this product should be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Hazardous Decomposition Products: None known

Hazardous Polymerization: Does not occur. This product can react with caustic (basic) materials to liberate heat. This is not a polymerization but rather a chemical neutralization in an acid-base reaction.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Data from laboratory studies conducted by Monsanto with RODEO® Emerged Aquatic Weed and Brush herbicide are summarized below.

Oral - Practically Non-toxic, (Rat LD₅₀ - >5,000 mg/kg)

Dermal - Practically Non-toxic, (Rabbit LD₅₀ - >5000 mg/kg)

Inhalation - Slightly Toxic, (Rat 4-hr LC₅₀ - > 1.3 mg/l, the highest atmospheric concentration achievable in this study); FIFRA Category III, Not DOT poisonous

Eye Irritation - Non irritating, - Rabbits (6 animals); 24-hr exp.; Draize Average: 0.0/110; EU: Corneal Opacity - 0.0, Iris - 0.0, Erythema - 0.0, Chemosis - 0.0

Skin Irritation - Practically Nonirritating - Rabbits (6 animals); 24-hr exp.; Draize Average: 0.1/8.0; EU: Erythema - 0.1, Edema - 0.0

In repeat dosing studies (6-months), dogs fed RODEO® Emerged Aquatic Weed and Brush herbicide exhibited slight body weight changes. Following repeated skin exposure (3-weeks) to RODEO® Emerged Aquatic Weed and Brush herbicide, skin irritation was the only effect in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure.

Additional toxicity information is available on glyphosate, the active herbicidal ingredient of RODEO® Emerged Aquatic Weed and Brush herbicide. Following repeated exposures (90-days) to glyphosate in their feed, decreased weight gains were noted at the highest test level in mice, while no treatment-related effects occurred in rats. Following repeated skin exposure (3 weeks) to glyphosate, slight skin irritation was the primary effect observed in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure. There was no evidence of effects on the nervous system, including delayed effects in chickens (repeat oral doses) or cholinesterase inhibition in rats (single oral doses). Reduced body weight gain and effects on liver tissues were observed with long-term (2-year) feeding of glyphosate to mice at high-dose levels. Reduced body weight gain and eye changes were observed at the high-dose level in one long-term (2 year) feeding study with rats, while no treatment-related effects occurred in a second study. No adverse effects were observed in feeding studies with dogs. Glyphosate did not produce tumors in any of these studies. **Based on the results from the chronic studies, EPA has classified glyphosate in category E (evidence of non-carcinogenicity for humans).** No birth defects were noted in rats and rabbits given glyphosate orally during pregnancy, even at amounts which produced adverse effects on the mothers. Glyphosate was fed continuously to rats at very high dose levels for 2 successive generations. Toxicity was reported in offspring from the high dose, a level which also produced adverse effects on the mothers. In a 3 generation study conducted at lower dose levels, no effects were seen on the ability of male or female rats to reproduce. Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells.

12. ECOLOGICAL INFORMATION

96-hr LC₅₀ Bluegill: >1,000 mg/l, Practically Nontoxic

96-hr LC₅₀ Trout: >1,000 mg/l, Practically Nontoxic

48-hr EC₅₀ *Daphnia*: 930 mg/l, Practically Nontoxic

Oral LD₅₀ Goat: 5,700 mg/kg, Practically Nontoxic

Brahman-cross heifers were given RODEO® Emerged Aquatic Weed and Brush herbicide, by gavage, at daily dosages of 0, 540, 830, 1290 and 2000 mg/kg for 7 consecutive days. Clinical signs of toxicity, including loss of appetite, diarrhea and death (1290 and 2000 mg/kg) were observed at 830 mg/kg or

above. The no-effect level was considered to be 540 mg/kg/day.

For environmental toxicity information with Glyphosate, the active herbicidal ingredient of RODEO® Emerged Aquatic Weed and Brush herbicide, refer to the Glyphosate Material Safety Data Sheet.

13. DISPOSAL CONSIDERATIONS

Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State and local procedures.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Do not reuse container. Return emptied container per the Monsanto container return program. If not returned, triple rinse container, then puncture and dispose of in a sanitary landfill or by incineration or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORT INFORMATION

Follow the precautions indicated in the Handling and Storage Section, Section 7 of this MSDS.

DOT Proper Shipping Name: Not Applicable

DOT Hazard Class/I.D. No.: Not Applicable

DOT Label: Not Applicable

U.S. Surface Freight Classification: Weed killing compound, N.O.I.B.N.

15. REGULATORY INFORMATION

SARA Hazard Notification:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): Not applicable

Section 313 Toxic Chemical(s): Not Applicable

Hazardous Chemical(s) Under OSHA Hazard Communication Standard: Not Applicable

Reportable Quantity (RQ) under U.S. CERCLA: Not Applicable

TSCA Inventory: All components are on the US EPA's TSCA Inventory List

16. OTHER

Reasons for revision: New CMA Format; New name; Correct ingredient %s; update spill procedures

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on

the EPA-approved label.

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